



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
RONALD L SENSENBACH
Machine Id
[RONALD L SENSENBACH] 003 685579-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0068210	MW0068214	MW0068218
Sample Date		Client Info		07 Jun 2024	01 Jun 2024	01 May 2024
Machine Age	hrs	Client Info		31406	31264	30561
Oil Age	hrs	Client Info		1500	1364	657
Filter Age	hrs	Client Info		727	575	657
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	6	5	2
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	3	4	3
Lead	ppm	ASTM D5185m	>18	2	0	0
Copper	ppm	ASTM D5185m	>80	2	1	<1
Tin	ppm	ASTM D5185m	>14	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

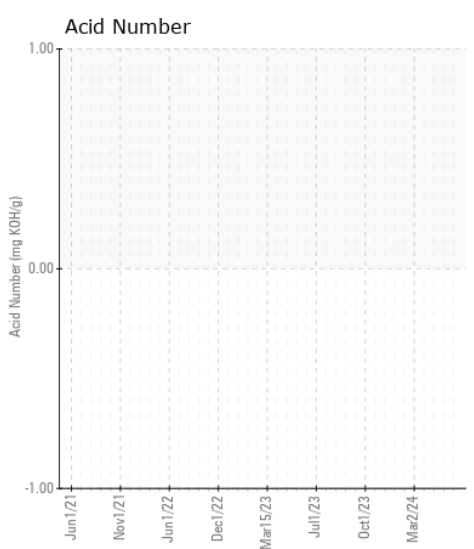
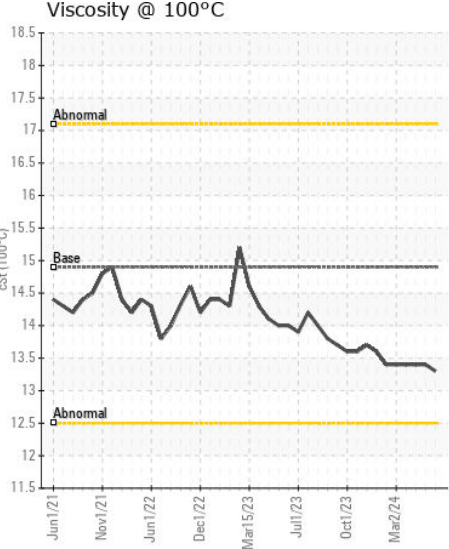
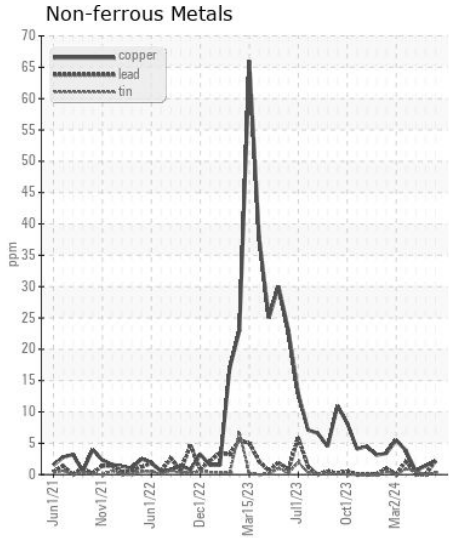
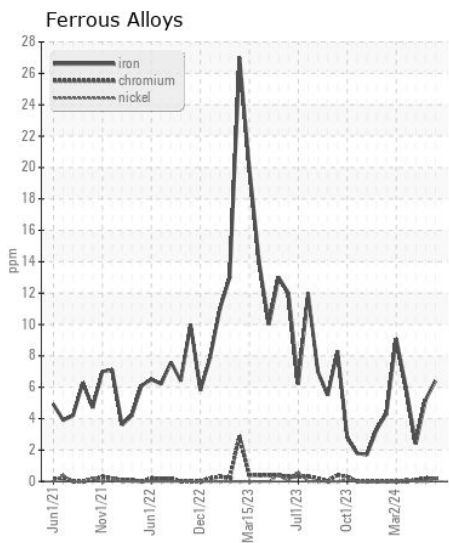
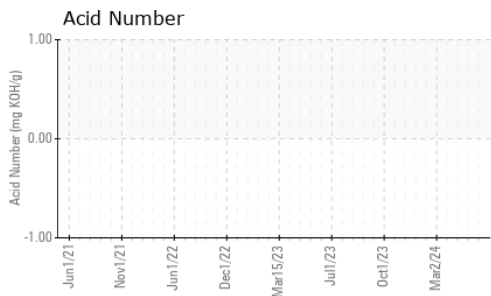
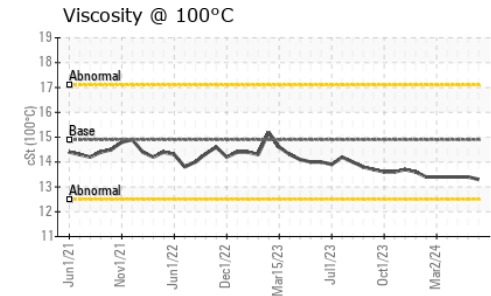
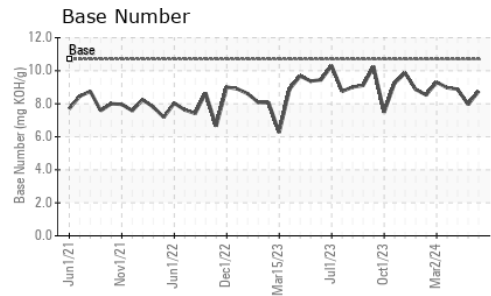
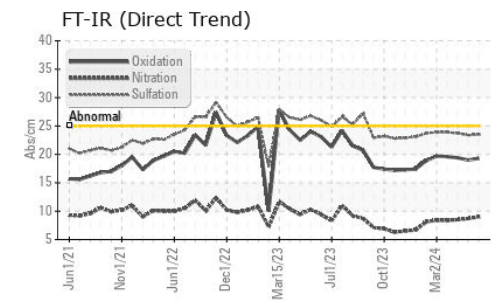
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	5	5	5
Potassium	ppm	ASTM D5185m	>20	5	2	<1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	9.0	8.7	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.5	23.4	23.7
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<1	2	<1
Boron	ppm	ASTM D5185m		333	398	348
Barium	ppm	ASTM D5185m		0	0	1
Molybdenum	ppm	ASTM D5185m		129	119	121
Manganese	ppm	ASTM D5185m		2	<1	1
Magnesium	ppm	ASTM D5185m		706	593	648
Calcium	ppm	ASTM D5185m		1870	1447	1448
Phosphorus	ppm	ASTM D5185m	760	931	798	753
Zinc	ppm	ASTM D5185m	830	1133	915	850
Sulfur	ppm	ASTM D5185m	2770	3714	2624	2850
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.3	19.0	19.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	8.75	7.95	8.88
Visc @ 100°C	cSt	ASTM D445	14.9	13.3	13.4	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0068210 **Received** : 24 Jun 2024
Lab Number : 06218421 **Tested** : 25 Jun 2024
Unique Number : 11096618 **Diagnosed** : 25 Jun 2024 - Sean Felton
Test Package : MAR 2 (Additional Tests: TAN Man)

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003
 Contact: MVJPA
 mvjpa@ingrambarga.com
 T:
 F: (615)695-3697

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)